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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,119	07/11/2003	Kelly Hudson	H147 1020.2	4101

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EXAMINER	
METZMAIER, DANIEL S	
ART UNIT	**PAPER NUMBER**
1712	

DATE MAILED: 07/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/618,119	HUDSON ET AL.	
	Examiner	Art Unit	
	Daniel S. Metzmaier	1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 February 2006 and 02 May 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *37-68* is/are pending in the application.

4a) Of the above claim(s) *42-45,49 and 50* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *37-41,46-48 and 51-68* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2/6/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claims 37-68 are pending.

Election/Restrictions

1. Applicant election without traverse of the species of Group I, claims 37, 38, 51-53, 58, 62, and 64, wherein gas is mixed with a liquid and the gas is air and the liquid is fuel oil, was made in the reply filed on October 21, 2005 as modified by the interview conversation conducted on January 20, 2006. Claims 37-41, 46-48, and 51-68 have been examined only to the extent that they read on the elected species.

2. Claims 42-45 and 49-50 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on October 21, 2005 and as modified by the interview conversation conducted on January 20, 2006. A complete response to the Final Office Action would include cancellation of non-elected claims.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical

Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 37-38, 41, 47-48, 51-53, 58, 62, 64, and 68 are rejected under 35 U.S.C. 102(e) as being anticipated by Wootan et al, US 6,386,751. Wootan et al (abstract; figures 1-8b; column 1, lines 49-54; column 2, lines 1-12, 45-54; column 3, lines 30-49 and 62 et seq; column 4, lines 35-38 and 65-66; column 5, lines 44 et seq and line 66 to column 6, lines 32 and lines 55-57; and claims) discloses methods of employing a diffuser / emulsifier for the oxidation of a variety of materials. Said diffuser / emulsifier induces cavitations in the fluid mixture.

Wootan et al (column 3, line 62, to column 4, lines 2; and column 5, lines 44 et seq) discloses the use of ozone, air or oxygen. Wootan et al (column 5, line 66, to column 6, line 32) discloses applications in treatment of wastewater by oxidizing toxic materials, hydrogenation of oils, mixing fuels and gasses/liquids resulting in higher fuel economy.

5. Claims 37-40, 46-48, 51, 54-68 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsuoka Mitsuhisa, JP 60 226594 A, as evidenced by the corresponding Patent Abstracts of Japan and Derwent Abstract, AN 1985-321700. Matsuoka Mitsuhisa (abstracts) discloses processing fuel oil and a gas such as air to generate a fuel in an excited state to enhance combustion thereof by processing through an apparatus that generates induced cavitation. Said apparatus comprising a

rough-rotor. The void zone adjacent to the cavitation zone would have been inherent to the use of the Matsuoka Mitsuhisa processes.

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 37-41, 46-48, and 51-67 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-23 of copending Application No. 11/062,534. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claims are generic and encompass the co-pending claims.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

8. Claims 37-41, 46-48, and 51-67 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-41 of copending Application No. 10/932,604. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claims are generic and encompass the co-pending claims.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

9. Claims 37-41, 46-48, and 51-67 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-5 of U.S. Patent No. 6,627,784. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claims are generic and encompass the co-pending claims.

Response to Arguments

10. Applicant's arguments filed May 2, 2006 have been fully considered but they are not persuasive.

11. Applicants (pages 8 and 9) assert the Wootan et al reference fails to teach the instant invention employing the apparatus as set forth in the specification. This has not been deemed persuasive since during prosecution claims must be given their broadest reasonable interpretation. Applicants claims do not distinguish over the prior art references. See MPEP 2111.

While applicants indicate (page 10 of response) that the Wootan et al reference teaches microcavitation zones resulting from rotary flow and low pressure areas, e.g.,

voids and further voids in the Wootan et al apparatus (see page 11, second full paragraph, applicants' response), applicants concludes that said methods and apparatus lacks the claimed plurality of cavitation zones with adjacent void zones. The Wootan et al methods teach cavitation resulting from boreholes as noted (page 11, response) by applicants. The claims do not distinguish over the prior art based on applicants characterization of the invention more narrowly defined in the specification.

12. Applicants (pages 11 and 12) assert Mitsuhisa does not disclose the claimed plurality of cavitation zones with adjacent void zones. Applicants assert the caviation in the Mitsuhisa reference is random and lacks an adjacent void zone. This has not been deemed persuasive since the claims do not require continuous or random cavitation.

Furthermore and as noted by applicants, the Mitsuhisa reference has a cylindrical wall with a plurality of baffles and arms. Said arrangement would inherently provide a plurality of cavitation zones with adjacent void zones. The caviation and adjacent voids zones resulting from the rotary motion between the arms and the baffles.

13. Applicants claims are not commensurate in scope with the arguments presented for patentability.

Conclusion

14. Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on Frebruary 6, 2006 prompted the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 609.04(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Metzmaier whose telephone number is (571) 272-1089. The examiner can normally be reached on 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Daniel S. Metzmaier
Primary Examiner
Art Unit 1712

DSM